

REMARKS

Claims 1-21 are currently pending in the application.

Applicants have amended the claims to overcome the claim objections noted in numbered paragraph 3 on page 3 of the Office Action. Further, Applicants have amended claims 7 and 8 to overcome the 35 U.S.C. § 112, second paragraph rejection.

The claims stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kaufman in view of Sun (claims 1-3, 9, 10, 13-15, 19 and 20) and Lee (claims 4-8, 11, 12, 16-18). Applicants have amended independent claims 1, 6, 9, 13, 16, 19 and 20 and request reconsideration of the rejections in view of the amendments of these claims and for the following reasons.

Kaufman is relied upon as the primary reference. As pointed out in the Office Action, phosphoric acid is added to a Cu polishing slurry in Kaufman. Sun also discloses that a phosphoric acid is added to an abrasive free polishing liquid. In Kaufman, however, this surfactant is used for stabilizing an abrasive contained in a polishing slurry, but not for improving the polishing rate.

In the present invention, a surfactant is used for increasing the polishing rate. The Office Action states that Kaufman's slurry contains both anticorrosive and surfactant

and, as a result, allegedly the same effect is achieved in Kaufman as in the present invention. However, one having ordinary skill in the art knows that when a surfactant is added to a polishing slurry with an abrasive, the surfactant is added for the purpose of dispersion. Applicants, however, add the surfactant to increase the polishing rate, as set forth on page 15 of the specification, lines 12-19, for example.

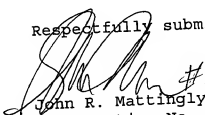
Accordingly, when a surfactant is added to a polishing slurry with an abrasive as shown in Kaufman, the mechanical polishing function will be reduced due to the adhesion of the surfactant to the surface of the abrasive, thereby leading one of ordinary skill in the art to conclude that the polishing rate would be reduced. Therefore, Kaufman does not teach to one having ordinary skill in the art that it is obvious to use a polishing liquid that includes a protection-layer forming agent comprised of an anti-corrosive and a surfactant of a molecular weight not less than 10,000. As such, the claimed invention as set forth in the independent claims patentably defines the present invention over the cited art.

The reference to Lee et al is applied to Kaufman and Sun for disclosing a polishing slurry to which an acrylic acid is added for Cu polishing. However, the acrylic acid is used to

reduce dishing as set forth in col. 3, lines 19-36 of the reference. Therefore, although Lee discloses a surfactant used for stabilizing the abrasive contained in a polishing slurry, the surfactant is not used for improving the polishing rate, as in the present invention. Therefore, one having ordinary skill in the art would not have thought to incorporate a surfactant in the polishing liquid of Kaufman et al in view of the teachings of Lee et al. Further, Sun is deficient in the same regard with respect to disclosing the combination of the anticorrosive and surfactant in the protection-layer forming agent, wherein the surfactant has a molecular weight of not less than 10,000.

In view of the foregoing amendments and remarks, the rejections under 35 U.S.C. § 103(a) should be withdrawn. Reconsideration and reexamination are respectfully requested.

Respectfully submitted,

 #34,83
John R. Mattingly
Registration No. 30,293
Attorney for Applicant(s)

MATTINGLY, STANGER & MALUR
1800 Diagonal Road, Suite 370
Alexandria, Virginia 22314
(703) 684-1120
Date: August 26, 2003